

## Virtual Firefly Festival Lesson: Flash Patterns

**In this lesson, participants will learn the secret behind the species-specific flash patterns of fireflies and then match visual representations of the patterns with the correct species.**

New Jersey is home to about 19 native species of fireflies, and you can probably see quite a few of them mingling together in your neighborhood! Each species of firefly has their own unique flash pattern and color, used to communicate with potential mates and predators. There are roughly 2,000 species of fireflies worldwide! Generally, the males are the ones to fly while flashing, and the females hang out perched on grass or in trees and flash to the males. One of the most numerous fireflies, especially here in the northeast, is the common eastern firefly (*Photinus pyralis*); the male can be easily seen flashing a yellow-green light as it flies upward in a J-shape. A female *P. pyralis* can distinguish a male of her species vs. a male *Photinus consimilis* which flies in a straight line and emits 4-9 rapid yellow flashes every ten seconds. That being said, the animal world is full of trickery; the female *Photuris versicolor* (also known as the femme fatale firefly) is an aggressive predator that mimics the flash patterns of the female *Photinus pyralis* to lure and eat the male *P. pyralis*! Along with the flash pattern, the color is important and can be used to identify species: the blue ghost firefly, *Phausis reticulata*, is found in southern Appalachia and the males are famous for their eerie blue light that they maintain for up to a minute as they meander a foot or two above the leaf litter, where the wingless females wait.

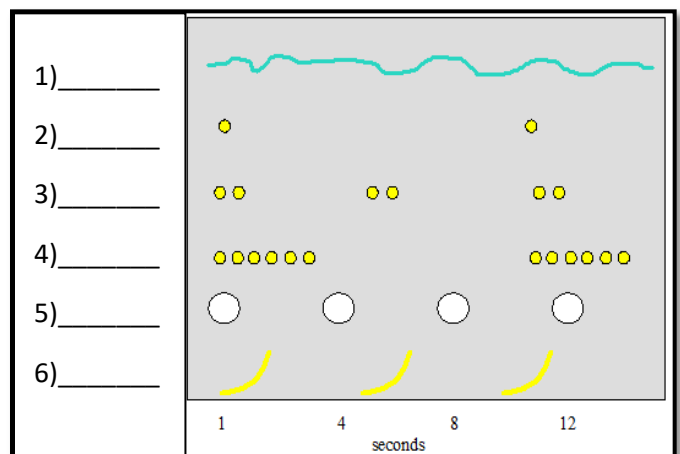


Photo by Soencer Black via Science Friday

- Learn more with this great [video from Science Friday!](#) Then, take a moment to relax with this mesmerizing short film titled [Firefly Experience from photographer Radim Schreiber.](#)

### Can you match the species and description of their flash pattern to the illustration?

- A) *Photinus macdermotti*: Double flash of yellow, each about 1.5-2 seconds apart with a brief 4-5 second pause. Display between 8:30pm and 9:30pm.
- B) *Phausis reticulata*: Not a flash, but a steady stream of blue, beginning in full dark.
- C) *Photinus pyralis*: Yellow light in a steady upward curve, displayed before full dark and usually done around 9:30pm.
- D) *Photuris spp.*: Series of single, bright white flashes similar to a flashbulb.
- E) *Photinus carolinus*: Series of 5-8 yellow flashes in synch with other individuals in the same area, followed by 8-10 seconds of darkness. Begin displaying at full dark and continue to about midnight.
- F) *Photinus brimleyi*: Single yellow flashes at intervals of about 10 seconds or longer, starting at dusk.



1) B 2) F 3) A 4) E 5) D 6) C

Answer Key